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Dipole moments of esters of orthopropionic and orthoformic acids

Arbuzov B., Shavsha - Tolkacheva T.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

1. Measurements were nude of the dipole moments of ethyl, n-ptopyl, n-butyl, hexyl and octyl esters of orthopropionic acid (mean value of dipole moment 1.92 D), and of the methyl, ethyl and n-butyl esters of orthoformic acid (mean value 1.90 D). 2. Measurements were made of the dipole moments and refractivities of antimony pentaethoxide (2.29 D). tungsten hexaphenoxide (2.13 D) and hexa-p-tolyloxytungsten (2.10 D). 3. Calculation of the interatomic distances of various molecular models. allowing for the radius of the spheres of action of the van den Waals forces of the methyl and methylene groups (2.0 A) and the radius of the spheres of action of the van den Wails forces of the hydrogen atom (1.2 A), shows that free rotation of the irregular groups is impossible in these compounds. © 1954 Consultants Bureau, Inc.

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